ON A COLLECTION OF MEDUSÆ MADE BY THE UNITED STATES FISH COMMISSION STEAMER ALBATROSS IN THE CARIBBEAN SEA AND GULF OF MEXICO.

By J. WALTER FEWKES.

The greater part of this collection was made in the years 1884 and 1885. It contains no descriptions of new species, but is interesting in a study of the geographical distribution of these animals and is a supplement to a paper already prepared on the Medusæ of the Gulf Stream. Many of the genera and species here mentioned up to the present have not been recorded from the region of the Gulf Stream, but will probably be later taken from this locality.

Family TAMOYIDÆ.

TAMOYA, sp.

Specimen examined.

Catalogue number.	Station.	Locality.	
		North latitude.	West longitude.
10730	.....	About 22°	About 84°

Family PELAGIDÆ.

PELAGIA CYANELLA, Peron et Lesueur.

Specimen examined.

Catalogue number.	Station.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
7545	Hyd. 123	15 49 00	67 36 40

Family LINERGIDÆ.

LINERGES MERCURIUS, Hæckel.

Specimens examined.

Catalogue numbers.	Station.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
7560	Hyd. 415	21 46 00	84 58 20
7564	Hyd. 411	19 55 00	84 19 45
7565	Hyd. 410	19 11 00	84 01 15
8744	.....	Off Havana.	

Family STOMOLOPHIDÆ.

STOMOLOPHUS MELEAGRIS, Agassiz.

Specimen examined.

Catalogue number.	Station.	Locality.	
		North latitude.	West longitude.
7543	Hyd. 97	° ′ ″ 11 12 20	° ′ ″ 62 11 10

Family CASSIOPEIDÆ.

CASSIOPEA FRONDOSA, Lamarck.

Specimen examined.

Catalogue number.	Station.	Locality.
7467	.....	Curaçoa.

The teratology of the medusan group from many considerations is a large field for research. We have all kinds of variations in organs, their arrangement, number, bifurcations, modes of development, and the like. The genus *Cassiopea* seems particularly subject to such abnormalities as its mode of life and anatomy might suggest. I have already described in *Cassiopea* (*Bull. Mus. Comp. Zool.*, vol. ix, No. 7) variations in the number of marginal sense bodies, and the existence of two ocelli on one "sense club," and two otocysts on the same peduncle. The abnormal condition described below is one which I have never before met with. The irregularity consists in the addition of a new oral arm on the under oral side of the subumbrella, homologous with one of the branching organs from the oral cylinder, although not arising from that body.

The oral cylinder appears to be normal on the under side of the umbrella, about one-half the distance from the edge of the base of the same to the bell margin, in the same radius as one of the normal oral arms adjoining that in which a sexual opening lies, there is an additional rudimental oral arm. This structure resembles the distal extremity of a normal arm and arises by a gelatinous base from the under surface of the bell walls. It is gelatinous, bifid, with sucker-frills along its free edge as in normal rhizostomatous genera.

The line of junction with the lower surface of the umbrella is at right angles to the radius in which it lies. It is separated from the oral cylinder by an unmodified, normal, region of the umbrella.

I have not dissected its attachments and therefore am unable to speak of modifications of chymiferous tubes, if such occur in the immediate

vicinity of its attachment. The question suggests itself whether this abnormal position of the oral arm implies a beginning of a fission or a wound in the body of the *Cassiopea*. There is nothing to throw any light on either of these explanations or to definitely answer either question.

Family VELELLIDÆ.

VELELLA MUTICA, Bosc.

Specimens examined.

Catalogue numbers.	Stations.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
7557	Hyd. 360	9 51 15	79 20 30
7606	Hyd. 372	11 43 30	80 51 30
10724	Hyd. 2352	22 35 00	84 23 00
10718	Hyd. 2380	28 02 30	87 43 45
10719	Hyd. 2380	28 02 30	87 43 45
10723	Hyd. 2384	28 45 00	88 15 30
10725	Hyd. 2393	28 43 00	87 14 30
10721	Hyd. 2400	28 41 00	86 07 00
7558	Hyd. 2142	9 30 15	76 20 30
7559	.....	Caribbean Sea.	
10729	.....	About 20°	About 86°
8745	.....	Unknown.	

RATARIA, sp. (Young *Velella* or *Porpita*).

Specimens examined.

Catalogue numbers.	Stations.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
7543	Hyd. 97	11 12 20	62 11 10
7563	Hyd. 138	10 51 30	67 01 40
10726	2379	28 00 15	87 42 00
10718	2380	28 02 30	87 43 45
10719	2380	28 02 30	87 43 45

Family ABYLIDÆ.

ABYLA TRIGONA, Quoy and Gaimard.

(Plate XX.)

*Specimens examined.**

Catalogue number.	Station.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
10724	2352	22 35 00	84 23 00

* This description is made from a specimen taken outside the areas treated of in the present report. The posterior nectocalyx only is found in the specimen from Station 2352.

The examples described came from the following locality. That from the Station 2352 is the same as far as the organs are present:

Catalogue number.	Locality.		
	Latitude.	East longitude.	
8764	Equator.	° 90	′ 00	″ 00

ANTERIOR NECTOCALYX.

(Figs. 1, 2, and 3.)

The anterior nectocalyx measures 10mm in length and 10mm in breadth. When seen from the side the thickness is 7mm.

Two faces may be distinguished, an anterior (Fig. 1), and a posterior (Fig. 2). The cavity of the nectocalyx (*cav.*) lies under or deeper than the anterior face; the somatocyst (*sm.*) under the posterior face. Externally these two faces may be distinguished as follows: The anterior face (*a.*) has a rectangular shape, and from it the antero-lateral faces (*al.*) slope off on either side, while on the lower sloping face an entrance (*cav.*) into the bell cavity (*cav.*) Fig. 3 can be seen. The central portion of the walls of the posterior face (Fig. 2) rises in a prominent cubical or spherical body (*p.*), 6mm in length by 5mm in breadth, in the center of which lies the cavity of the somatocyst (*sm.*).

Between the lower edge of this projection and the lower rim of the nectocalyx there is a triangular opening (*y.*) into which fits the anterior projection of the distal nectocalyx.

The anterior face (*a.*), (*au.*), (*al.*) is made up of five planes. A rectangular anterior plane (*a.*) bounded by four ridges, extending about 7mm in length and 2mm in breadth, occupies the medial portion of the face. On the upper side it forms one side of a hexagonal surface which occupies this end of the anterior nectocalyx (*au.*). The hexagonal plane may be called the upper plane of the anterior nectocalyx. Of the five remaining sides of the hexagon two adjacent sides are the upper bounding lines of the antero-lateral surfaces (*al.*), two others are the posterior lateral surfaces (*pl.*), and the side of the hexagon opposite the upper bounding line of the anterior rectangle, in the upper bounding line of the anterior face of the nectocalyx.

On each side of the border of the anterior rectangle is likewise the bounding angle of an anterior lateral face or plane (*al.*). Of these there are two. The inner edge is the side of the rectangle (*a.*); the upper edge, the margin of one side of the upper hexagon. The outer edge is the lateral rim of the anterior face, which is convex, and likewise a lower side which forms a margin of the opening into the bell cavity.

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The margin of this surface (antero-lateral) is therefore made up of bounding lines of unequal length. As the outlines of the curved lines which form the sides opposite those of the anterior rectangle are somewhat distorted, it is not possible to determine whether they are simply curved or double, composed of two ridges forming at their junction an obtuse angle. The latter condition exists in *A. trigona* as described by Huxley.

Seen from the posterior face (Fig. 2) the anterior nectocalyx has a cubical or spherical projection in the middle, which is bounded by a triangular plane surface, the sides being at first almost parallel and then bending together below in a short angle just above the entrance into a depression (*y.*), into which fits the anterior extremity of the posterior nectocalyx. In the specimens preserved in alcohol the posterior lateral planes (*pl.*) are composed of two parts, one of which is parallel with the triangular plane, the other at right angles to it. The upper posterior plane (*up.*) is hexagonal, one side formed of the upper side of the posterior triangle. The two adjacent sides are formed by the bounding lines of the postero-lateral planes just mentioned and a part of the antero-lateral planes with the upper bounding line of the posterior face.

The posterior lateral planes (*p l.*) are polygonal with bounding lines of unequal length. The outer wall of these planes is the margin of the anterior nectocalyx, and the lower the ridge which forms a division between the lateral plane and the opening into the cavity, into which the anterior end of the posterior nectocalyx fits. The outer border of the lateral planes is toothed at the lower rim.

The great width of the antero-lateral (*al.*) and posterior lateral (*pl.*) planes imparts to the anterior nectocalyx a great breadth, and in alcohol we seem to have two lateral wings. How much of the shrinkage which causes this modification is due to the alcohol cannot now be determined. The thickness in the lateral walls between the middle line of the nectocalyx and the margin of the faces (anterior and posterior), or the crest of the bounding angle, is much greater than that which passes from the same line through either somatocyst or bell cavity. The same is also true in *A. trigona* described by Huxley.

In a bottle with the anterior nectocalyx are fragments which are identified as the posterior nectocalyces. These, however, are not fastened to the former, yet there is no doubt that they belong to the same genus.

POSTERIOR NECTOCALYX.

The posterior nectocalyx, although shrunken from its former pyramidal form, is in a good condition for study. Its whole length is 20^{mm}. The outer surface is crossed by three longitudinal crests, which extend

from the anterior extremity to the rim of the bell surrounding the opening into the bell cavity, where they are extended into projections more or less markedly serrated. In addition to these three longitudinal ridges there is on the posterior side of the largest a thin plate serrated at its lower edge, which forms as in *A. pentagona* a longitudinal sheath into which the axis can be withdrawn. When the bell is placed on one side, so that the anterior conical end of the bell is at the right hand side, the largest elevation will be seen above and the smaller below, while the serrated covering-plate lies between and parallel with the larger ridge. The margin of the larger ridge seen in this way is rounded and has two ridges, or is double for a short distance near the junction with the bell margin, or where it forms a projection. It gradually becomes reduced in elevation, passing from the posterior to the anterior extremity of the bell, and is more rounded posteriorly. The other elevations are slighter with indistinct serration on the crest. The covering-plate lies between the largest and the smallest. The section of the posterior nectocalyx which lies between them is the posterior face of the distal or posterior nectocalyx.

The internal organs are in too imperfect a condition for study. In the cavity of the somatocyst the remains of the "spongy" mass of cells were observed. The walls of the cavities of both anterior and posterior nectocalyces have become so shrunken that the course of the tubes could not be observed.

The stem and its appendages are broken off and are not found with the nectocalyces. This species resembles *A. trigona* Q. and G. more closely than it does the specimen described as *A. trigona* by Huxley. Minor differences from both do not warrant my redescribing it as a new species.

Family HIPPOPODIDÆ.

Gleba hippopus, Forskål.

Specimens examined.

Catalogue number.	Station.	Locality.	
		North latitude.	West longitude.
		° ′ ″	° ′ ″
10728	2395	28 36 15	86 50 00

This specimen is a single nectocalyx.